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Sorption concentration of ions of copper (II) and lead (II) by magnetic sorbent

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Abstract

By a chemical method, using a method offered by Massart, where as the use of initial solutions of chlorous and chloric iron magnetite is produced, possessing sorbate properties in relation to the ions of lead(II) and copper(II). Influence of different factors (pH, temperature, time) on the degree of sorption is investigated. A specific surface area of magnetite is measured by the method of Bruner-Emmet-Teller on the analyzer of NOVA 1000e. Structural parameters and phase composition of standards are investigationed by X-ray fluores-cence energy-dispersive spectrometer of brand «BRA-18». The best values of acidity of environment are de-termined for flowing of sorption process on magnetite. Conducted measurements of ζ -potential before and after the sorption indicate the change of charge of double electric layer at the surface of magnetic iron metal-lics, that is related to adsorption of the positively charged cations of the solution. Influence of the interfering ions is indicated, influence of phosphates and sulfates is set on the sorption of IST. The isotherms of sorption of IST are got on magnetic iron. The offered method is tested on the standards of the melted water of snow-cover in the affected of casting production zone.

Keywords

Concentration, Heavy metals, Magnetite, Sorption